

Overcoming challenges to digital agribusiness start-ups

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Introduction

The recent CTA workshop on 'catalysing actionable knowledge to enhance next-generation ACP agribusiness through digitalisation' identified five intersecting drivers that explain what farmer-oriented agribusinesses expect to achieve by investing in digitalisation: reduced risk, raised productivity, increased efficiency, improved decisions, and enhanced market access. Participants argued that digital interventions all serve one or more of these, depending on specific local needs and situations. A critical factor underpinning what works in all these areas is the economic sustainability of the business models used to deliver value and services.

This brief by Wietske Kropff, Valarie Pilgrim and Paul Neate introduces a set of business-plan challenges faced by digital agribusiness start-ups in ACP countries

and promising ways to overcome them. Challenges covered include access to finance, knowing the customer base, sourcing data, access to technical, business and management skills and support, the policy environment, what farmers need, languages and formats, trust, and data ownership and privacy.



Background

Digital agriculture – the use of data and information technologies to increase the efficiency and profitability of agriculture and related value chains to deliver more and better food – has transformed agriculture and food production in North America, Europe and Australasia. But we need to deliver its benefits to small-scale operations in Africa, the Caribbean and the Pacific (ACP) to help these regions deal with the challenges they are facing.

Agriculture globally is facing enormous challenges. Key among these is the prospect of feeding nearly 10 billion people by 2050 in the face of climate change and increasing shortages of land, water and other inputs. To do this, agriculture needs a major shot in the arm – and digital agriculture offers the possibility of providing this.

But digital agribusiness is an emerging sector in the ACP, and those trying to introduce it face enormous challenges to deliver impacts at scale while making a profit. This brief, based on findings from a recent workshop with ACP entrepreneurs and practitioners, outlines some of these challenges as a contribution to discussions about how to bring about the next agricultural revolution – the digital agricultural revolution.

Getting up and running

Access to finance

A big problem that all start-ups face is access to finance, and the digital agriculture sector is no different. Most digital agriculture start-ups in ACP countries depend on financing from the development sector to get started.



This has its challenges. This finance is by its nature very short term and usually targeted to support during only a pilot phase – not to the longer-term commercial growth of the business. It is also largely directed towards developmental rather than commercial objectives.

This creates something of a conundrum. The clients who are most likely to be able to pay for services and inputs are larger farmers and traders, who see this as an investment rather than as a cost. But development-oriented donors are looking for interventions that will raise small-scale farmers and businesses out of poverty – and these are clients who are likely to be highly risk-averse and unwilling to pay for inputs and services that are less than a ‘sure thing.’ Maybe one way to address this is for projects to pursue multiple revenue streams. For example, one digital agriculture project in West Africa is generating only 20% of its revenue from small-scale farmers – its target audience. The other 80% comes from selling the data it is gathering about the farming sector to financial institutions and other businesses that want to target the agricultural sector.

Getting financing to scale up operations is also a major challenge, especially for businesses operating in emerging sectors such as digital agriculture. Banks and financial institutions have little knowledge or experience in these new areas and see them as highly risky. Businesses in their early years will struggle to demonstrate the kind of long-term financial history that many investors are looking for.

There are also some not-so-typical costs associated with starting and scaling up a digital agriculture enterprise. Such businesses have to invest in collecting and analysing data on the performance and impacts of the technology that they are employing and in using the results to refine their business proposal and to provide investors with evidence of the development impact and financial viability of the business. These objectives often conflict and the picture is complicated by the fact that many digital agriculture businesses have found that they have to be opportunistic and pursue multiple revenue streams in their early years in order to cover their costs – small-scale farmers and businesses are not willing or able to pay much for services, especially when their benefits are unproven. This ‘blurs’ their core business model, which can put off investors – but so does lack of income. More needs to be done by organisations like CTA, the CGIAR and the Global Donor Platform for Rural Development to make development donors and other investors aware of the realities of pushing the frontiers of digital

agriculture and to encourage them to be more flexible in assessing the investment potential of such projects.

Knowing your customer base

The issue of financing also links in with possibly the single most important aspect of developing a new product or service – knowing your customer. This is one of the major data gaps that digital agriculture start-ups face – lack of reliable background data on potential clients, their needs and their circumstances (especially their financial circumstances and ability and willingness to pay for services). Without these data, it is difficult to formulate a good business model that has a realistic chance of becoming a sustainable business. And yet gathering such

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data is an area that donors are reluctant to fund because the return on investment is not immediately obvious.

There are numerous examples where farmer profiling and the like is paying dividends, including the likes of NUCAFE and Igara Tea in Uganda. Not only have these brought benefits to the client group through delivery of tailored products and services, they are also piquing the interest of the agribusiness sector and financial institutions, who also need to know more about these potential clients to improve their own business intelligence. Some enterprises have already found that these data can become the basis for alternative revenue streams that can cross-subsidise the delivery of their core product to farmers.

Sourcing data to base the system on

On the topic of data, digital agriculture start-ups often face challenges in accessing the data they need to deliver their services. Some key data are lacking, such as the detailed soil and vegetation maps commonly available across Europe and North America. Even weather data may be restricted and closely regulated – in some countries, for example, the government meteorological

agency has monopolistic control over access to and dissemination of weather data. Digital agriculture initiatives have to invest heavily in generating their own data or buying it from commercial sources and finding ways to work around existing constraints, adding to their costs and challenges.

Technical skills

As with any ‘bleeding edge’ initiatives anywhere in the world, digital agriculture entrepreneurs in the ACP are unlikely to find people with all the skills that they need. For example, several start-ups that are using drones in Africa found that they could not find trained – or even amateur – drone pilots. The only way forward was for them to identify the types of skills and experience that make someone a good prospect as a drone pilot and then to develop their own training programme. This is an additional expense that start-ups have to plan for (and that they themselves do not necessarily have the skills to implement).

Business and management skills and support

Running a business is tricky for anyone, and even more so for those just starting out.

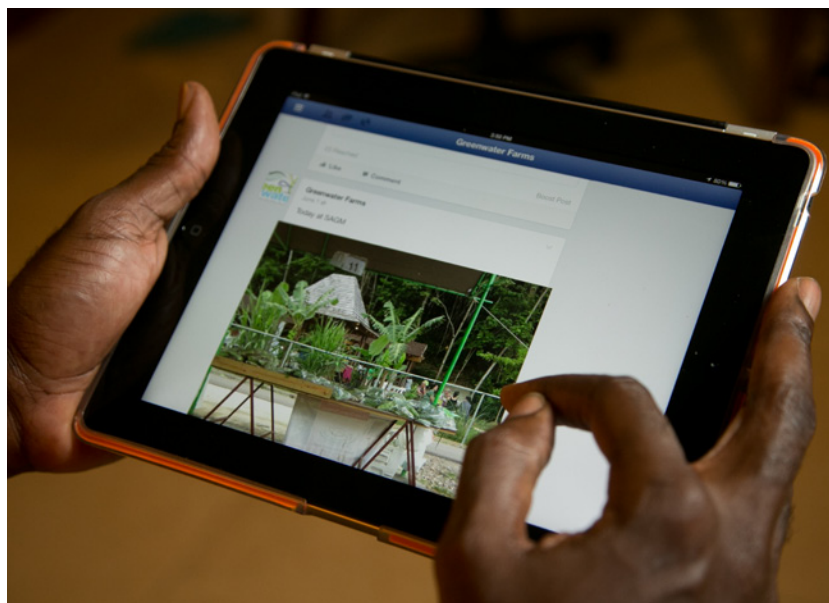
All businesses need marketing and other business management expertise and business support services, but these are not always easy to come by. Start-ups also benefit from mentoring and coaching, but again this support is rarely available in ACP countries.

A strong entrepreneurial and innovation ecosystem, including incubators, accelerators, corporate venture capital, angel investors and the like significantly increases the probability of new businesses succeeding. Establishing such an ecosystem is going to require an integrated approach involving the public and private sector to put all these pieces in place.

While there has recently been growing interest in supporting entrepreneurial development, both among governments and among donors, many budding entrepreneurs find that finding staff with even basic literacy and numeracy skills is a challenge and this can constrain the development of their business. This highlights the ongoing need for public-sector investment in education at all levels. There is also a strong potential role here for incubators, accelerators, mentoring schemes and other initiatives to support business skills development at local levels.

The policy environment

This is the elephant in the room. You have an idea for a great product that will change people's lives; you have clients that want it, and a business plan that shows how you will make a go of it. But what about the policy environment? This is a real issue for emerging technologies like those used in digital agriculture – many are so new that the policy environment has not caught up with them. For example, few ACP countries have policies and legislation in place that govern the use of drones in the agricultural sector. And changes can come in at any time, changing the basis on which businesses operate. In some cases these can be positive. For example, Uganda introduced new regulations on savings and credit cooperatives that imposed strict financial reporting requirements. This provided a boost for Ensibuuko, which provides a financial management and reporting package for such operations, as it created a demand



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for this type of product. It also raised the profile of the sector in the eyes of investors. However, changes can also be negative, such as if a new tax is introduced on, for example, mobile money transactions.

Businesses operating in the digital agriculture space have to be flexible and ready to deal with this rapidly changing environment. Some have taken a proactive approach, engaging with government officials and others who will influence these developments, keeping them up to date with developments in the sector and feeding them a constant stream of positive messages about the benefits of these technologies. This can have positive results, but is a considerable overhead and risk to the emerging business.

Delivering the service clients need

What technology offers, what farmers want

Henry Ford famously said, “If I had asked [my customers] what they had wanted, they would have said a faster horse.” Farmers and others engaged in the agricultural value



“The journey is long and painful. If you don’t have patience and resilience, you will not succeed.”

chains may not be aware of the potential of some of the technologies behind the current digital agriculture revolution, so there may be a case for such Fordian blue-sky thinking in this sector. But this comes with its own challenges: Will your potential customers recognise the ‘problem’ that you are addressing? Will they be willing or able to pay for your solution? Do they have and know how to use the technology on which your solution is based (smart phone or feature phone, tablet, computer)?

This depends on a number of other factors, including coverage of telecommunications infrastructure (which commonly declines rapidly the further one gets from major centres of habitation) and literacy generally and digital literacy in particular. One successful digital agriculture start-up stated that 80% of their marketing effort is expended on educating their audience about fundamentals, such as how to use a mobile phone to send and receive texts, and only 20% on their product per se. This will have to be borne in mind when planning marketing efforts.

Language and format

Language is also a major consideration. What language should your system work in?

Should it be text-based, or does your target clientele want any messages in spoken or graphical form?

Whom does your target client trust?

This is a key question in planning your ‘marketing’ strategy. Do they trust government extension agents, or local traders, or do they look to innovative farmers in their community, for example? Are there existing farmers’ organisations or trade bodies that would be a conduit to reaching a large number of possible target clients with your marketing efforts?

Data ownership and privacy

Trust is also a very big issue when dealing with client data, such as in farmer profiling. This is a new area to many people, who will be unfamiliar with the risks and issues relating to giving people access to information about themselves and their operations. Clients will want to know how their data will be used, and who will have access to them. Digital agriculture businesses will need to be open and above board about these and spend time gaining the trust of their clients. Few ACP countries have legislation in place yet concerning data privacy, and digital agriculture businesses

will be at the forefront of dealing with this emergent issue.

Making it sustainable

So you have your product and you have your target clientele. The next challenge is to build your customer base, and to persuade them to pay for your services.

This is where many start-ups founder. With so many donors supporting so many initiatives in the digital agriculture space, farmers and others along the value chain are being inundated with offers for exciting new services, many of which will be free of charge. Many, if not all, are initially unproven and require a leap of faith from the client.

Donors and entrepreneurs need to be mindful of the conditions that signal that the enterprise is on a path to sustainability (strategic linkages, access to competitively priced inputs, size of client base, revenue, policy environment) and design projects that include activities that are directly aimed at helping the digital agriculture start-up to achieve these conditions.

Some start-ups have used the pilot phase of their operation to offer their services free of charge to their target audience, and then phased in charges once the users have seen the benefits for themselves. The start-up will have to make this clear to its clients from the beginning and provide a clear indication of the likely scale of the fees if it is not to lose the trust of its clientele when it tries to introduce fees.

As noted elsewhere, other operations have pursued multiple revenue streams, such as charging low fees to their target audience and supplementing this income by selling their market intelligence to other businesses who might want to target the same audience, e.g. banks, input suppliers and the like. This has parallels in the e-commerce world but must be handled carefully to ensure that the operation does not fall foul of data privacy legislation or lose the trust of its clientele.

Other projects have delivered their services through farmers' organisations or cooperatives, with the fee for the services

being bundled up with membership fees. This has some promise as an approach, as the services – once shown to provide real benefits – add value to the membership of the organisation providing them, and the data generated through profiling of its members becomes a strong bargaining chip for negotiating with buyers and sellers of other goods and services.

Whatever the approach adopted, success will not come overnight. As the head on one successful digital agriculture start-up said, "The journey is long and painful. If you don't have patience and resilience, you will not succeed."

Challenges and opportunities

The world needs digital agriculture to take off if we are to meet the challenges of feeding a growing population without destroying the environment or the world in which we live.

Governments, educational institutions, research and development agencies, donors, investors and others each have vital roles to play in creating a business environment in which digital agriculture entrepreneurs can thrive.

The challenge now is to transform the many challenges into opportunities, and the opportunities into a reality for digital entrepreneurs, small-scale farmers, traders and others in the developing world.



Further reading

Funja, R. and Ingabire, M. 2018. *Youth – the springboard for digital agribusiness in ACP countries* [online]. CTA Blog. Published 3 December 2018. Available at: <https://bit.ly/2C55Jiu> [Accessed 8 January 2019].

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Visser, P., van Ameringen, M. and Rwakigumba, R. 2018. *Pathways to scale finance for digitalisation on the path to agricultural transformation* [online]. CTA Blog. Published 12 December 2018. Available at: <https://bit.ly/2LW6ehW> [Accessed 8 January 2019].

This brief was created through a CTA-led process to document and share actionable knowledge on 'what works' for ACP agriculture. It capitalises on the insights, lessons and experiences of practitioners to inform and guide the implementation of agriculture for development projects.

A series of video recordings with participants in the workshop gives personal perspectives on some of the issues covered by this brief. See: <https://bit.ly/2Cja68q>

The products of the workshop can be found and downloaded at: <https://cgspace.cgiar.org/handle/10568/97710>

Authors:

Wietske Kropff coordinates the data-driven agronomy community of practice of the CGIAR Platform for Big Data in Agriculture.

Valarie Pilgrim is business climate reform coordinator at the Compete Caribbean Partnership Facility (CCPF) hosted by the Inter-American Development Bank. CCPF is a private sector development program that delivers innovative and practical solutions that stimulate economic growth, increase productivity and foster innovation and competitiveness.

Paul Neate is a freelance science writer and editor specializing in developing world agriculture and rural development. He has a background in agriculture and publishing and has worked at agricultural research and development institutes in Africa, the Near East and in Europe.

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About the series

CTA Technical Briefs document experience and learning in topical issues of interest to the ACP agricultural development community. They are intended as a practical guide for people involved in an issue professionally or for people with a strong interest in the topic.

Technical Centre for Agricultural and Rural Cooperation
P.O. Box 380 – 6700 AJ Wageningen – The Netherlands
Tel: +31 (0) 317 467 100 | E-mail: cta@cta.int | www.cta.int

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